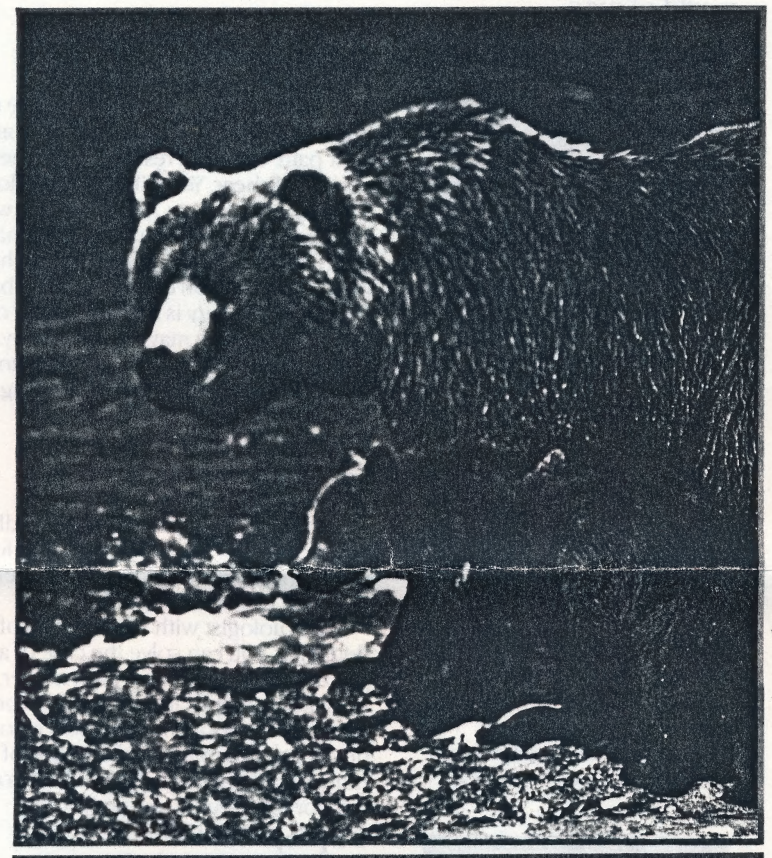
AUDUBON

Wildlife Adventures

Wildlife Adventures

GRIZZLY BEARS



GRIZZLY BEARS

Play the role of investigator as you design strategies to save the grizzly.

Advanced Ideas

Ages 9–Adult

Apple® IIGS

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AUDUBON

Wildlife Adventures

GRIZZLY BEARS

GRIZZLY BEARS

Walk with care in the threatened world of the magnificent grizzly bear. Explore its wilderness home. Understand how we have driven the grizzly close to extinction. Discover ways of preserving animals in the wild and put all you learn into practice. In four interactive stories, you become a researcher, ranger, detective or resource developer. You decide on courses of action that will balance the delicate harmony of the grizzly's wild habitat within the civilized world of man.

A grizzly is about to discover your scent. How will it respond? What should you do? Check your on-line Bear Country Handbook. Then . . . think clearly and think fast!

COMMON NAME:
Red Squirrel
SCIENTIFIC NAME:
Tamiasciurus Hudsonicus
KINGDOM: Animal
CLASS: Mammal, rodent family
HABITAT: Pine, mixed, and hardwood forests
SEASON: Spring, Summer, Fall
NOTES: Grizzlies smell and dig up caches of pine nuts collected by red squirrels. Sometimes they catch and eat squirrels, too.
other cards
Print
for menu

In the woods, you identify new plants and animals. Search your wildlife data cards to learn more about a grizzly's world.

Food Groups
You are at the edge of a big beautiful lake. Dr. Potts says, "Many animals come to drink here at sunset. This is a good spot to see some grizzlies."
Press RETURN to go on.

As you uncover clues about grizzly bear habitats and food sources, check your map and locate likely places to track and find grizzlies.

Look . . . Listen . . . Follow the wild grizzly!

A warm spring breeze shakes the new buds on the huckleberry bushes along your path. You are a researcher on the trail of a grizzly bear. You hike to a meadow full of *spring beauty*. A patch of the white flowers is torn up where some animal has recently been digging. Could it have been a grizzly? You check your database. Yes, *spring beauty* is a favorite food of bears. The grizzly may still be nearby. Suddenly, you hear a loud rustling and see a curious, hungry grizzly coming your way.

What are you going to do?

Get ready to think your way through the wilderness

When you take an Audubon Wildlife Adventure, you enter realistic wildlife situations where you investigate, weigh facts and make judgments.

As a biologist with the instincts of a detective, you can solve the case of a grizzly bear's death. As a park ranger, you must keep people and bears from coming into conflict. Your challenge as a resource developer is to balance the needs of humans and grizzlies as you build roads, drill for oil or cut down timber.

Be prepared for ever-changing challenges

Extensive written and on-line resources provide you with vital information about safety and survival, bear behavior, and local plants and animals.

Each wildlife adventure you take will be different – as the seasons change, as the level of difficulty changes and as your decisions affect the environment. Each adventure has new challenges for explorers of all ages and new opportunities to examine the issues of wildlife conservation.

Come . . . explore the forests of the endangered grizzly bear and discover the ways of Grizzly Bears in the wild.

Unpack your wildlife gear!

Everything you need to explore the wild with your computer is inside this box . . . including a full-color *Grizzly Guidebook*, containing:

- Questions and answers about grizzly bears
- Supplemental activities and curriculum guide developed by educational and wildlife experts

Audubon Wildlife Adventures . . . the learning programs that turn ***you*** into a wildlife explorer.

Developed by the National Audubon Society, these programs complement the highly acclaimed Audubon television series on TBS and PBS.

Enjoy the first four Audubon Wildlife Adventures: *Grizzly Bears, Whales, Sharks and Poacher Patrol.*

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2902 San Pablo Avenue
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For: Apple® IIGS
Required: 512K RA
Disk size: 3.5"
Optional: Color monitor

Audubon

Wildlife Adventures

GRIZZLY BEARS™

Instruction Book

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Getting Started

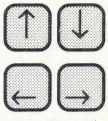
Protecting the Grizzly Bears Diskette(s)

The *Grizzly Bears* program comes on floppy disks, or diskettes. Always keep the program diskettes, and any others you might have, in their protective sleeves and away from anything magnetic (including televisions). Never use any hard-tip or ballpoint pens when labeling a diskette; use only soft, felt-tip pens which will not damage the surface of the disk. Because diskettes are extremely sensitive, they should be handled carefully, and nothing should be allowed to touch the surface of the disk itself.

Using the keyboard

Most functions in *Grizzly Bears* can be done with a mouse. If you do not have a mouse, you will find these keys useful:

To move the highlight/ cursor up and down menus or data base lists



To move the + sign or other symbol across a map or other graphic

RETURN To tell the computer you have made a choice, or to go to the next screen

DELETE To erase a typed character

ESC To stop a game or to return to a menu

Inserting the Grizzly Bears Diskette(s)

Insert the *Grizzly Bears* diskette into the drive with the label(s) between your fingers. Lift open the door of the disk drive, and gently slide in the diskette, exposed end first. Diskettes should never be forced into the drive. With the diskette fully inserted, close the disk drive door.

Booting Grizzly Bears

To use the program, you must first boot the diskette. Booting a diskette means starting up the disk drive from the beginning. The following instructions describe how to boot *Grizzly Bears:*

1. Start with the computer turned off.
2. With Side 1 of the *Grizzly Bears* diskette face up, gently insert the diskette in Drive 1, then close the disk drive door. (Note: Do **not** place a write-protect tab over the notch on Side1.)
3. Turn on the monitor. Then turn on the computer. *Grizzly Bears* will

load and run automatically. (If the title screen does not appear within 30 seconds, repeat the booting procedure. If the program does not run after several tries, the disk may be damaged.)

4. If using a color monitor, adjust the color so that the bear on the title screen is brown.

Signing In

The first thing you will be asked to do when *Grizzly Bears* appears on your screen is to sign in. Just use the keyboard to type the letters of your name. The computer will accept up to 10 letters. If your first name is longer than that, just type in a nickname. Then press RETURN, or use the mouse button.

Next you will be asked to type your last name. Type it and press RETURN, or use the mouse button.

Note: Each time you sign in, be sure to use exactly the same name, so the computer will know who you are. For example, if your name is Michael, sign in as *Michael* each time, but do not switch to *Mike*, or the computer will think you are two different people. When you sign in with a name the computer knows, it will make sure that you do not repeat an adventure.

Signing in lets you explore four grizzly adventures. Each adventure provides a number of stories, so you can play them again and again, learning more about grizzlies each time. The computer will keep track of which stories you have played, so you can look back later and see how many times you completed each story.

After you sign in, you will be presented with the *Main Menu:*

MAIN MENU

1. On the Spot with Dr. Potts
2. Bear Encounters
3. Grizzly Bear Mystery
4. Oil Explorer
5. Bear Country Handbook
6. Grizzly Food Data Cards
7. Grizzly Habitat Model
8. Utilities
9. Quit

The first four items on the menu are the stories on the *Grizzly Bears* diskette. The next three items are other programs you can use to explore the world of the grizzly. The eighth item allows for turning off the sound and for record-keeping. The last item allows you to leave the program.

Each story builds on the knowledge gained in previous stories. We suggest starting with the first story and moving on from there. The *Handbook,* the *Data Cards* and the *Model* are introduced in the stories. Once you have learned a little bit about these tools, you can use them directly from the *Main Menu.*

Choose A Story

Press the up or down arrows, or use the mouse or the number keys, to move the cursor to the name of the story you want. Then press RETURN, or use the mouse button.

A message may appear asking you to put a different side of the *Grizzly Bears* diskette in Drive 1. When this message appears, open the disk drive door and remove the diskette. Find the requested side, put it face up in Drive 1, close the disk drive door, and press RETURN or use the mouse button.

The first screen of the story will appear, and you will be off on a grizzly bear adventure!

What's The Story?

In each story, you will be asked to play the role of a person whose life is intertwined with the grizzly. You will be asked questions, and you will have to make decisions that affect both grizzlies and people. Sometimes you will not know what to do. But you will meet people in the stories who can help you. By using the help they will give you, you will learn what you need to know to solve the problem.

About the Utilities

The *Utilities* allow you to turn the sound on and off. They also provide a **record-keeping system.**

The record-keeping system keeps track of how many adventures in each story you have completed. It does this so you will not have to repeat an adventure. If you wish to see how many adventures you have completed, use the *View a Record* selection from the *Utility Menu.*

Story 1: On the Spot with Dr. Potts

You are on vacation in the Great Rock National Park when you spot a huge grizzly. What should you do? Run away? Keep quiet? You will have to make a quick decision and hope for the best. Too bad that you have not yet met Dr. Potts. She would know what to do. She has been studying those amazing creatures for over 30 years. She can help you learn what every hiker should know about grizzlies.

When you meet Dr. Potts, she will give you an old, tattered copy of *The Bear Country Handbook.* Look through it, and you will see how much exciting information there is to know about these bears.

What if you could be Dr. Potts' assistant? Well, she is in need of help, and if you pass a little quiz she gives, you will find yourself right in the middle of her missions through bear country. Ask her for help if you need it during the quiz.

Once you become Dr. Potts' assistant, each mission in which you accompany her will become more challenging, but you will be given more and more tools to help you in your adventures.

On some missions in this story, you will track down a grizzly by using your knowledge of the area and of the foods that grizzlies eat during each season. On other missions, you will get to use a radio receiver to track a grizzly that is wearing a radio collar.

If you think that you are a grizzly whiz, you can plunge right in. But, if you are a greenhorn, do not worry — Dr. Potts will be at your side throughout each mission. With her guidance, the help of the on-line *Bear Country Handbook* and the tools in her portable computer, you will learn what you need to know!

Using the Maps

Dr. Potts has a map of each area that you will explore. Here are some helpful hints for moving around the territory using those maps:

- Use the mouse or the arrow keys to move the graphic of the person that represents your character.

- If you are not sure what to do, press an arrow key or move the mouse. Your character will move, and you will get a response from Dr.

Potts or a report about where you are.

• You will find that you may not be able to pass through rivers and forests at one place, but if you try other locations, you will eventually find a spot that is passable. Explore the entire area represented by the map until you discover a grizzly.

• To help locate a grizzly, Dr. Potts has marked on her map where the seasonal foods of the grizzly are found. Since bears need to eat, you will probably be most successful if you head toward the food source for the current season.

Bear Country Handbook

Where can you go to find all you need to know about grizzly bear behavior? The on-line *Bear Country Handbook,* of course. It is a great source of information about what grizzlies look like, where they can be found and how to behave in bear country. Reading the *Handbook* is one of the best ways to prepare for your second mission with Dr. Potts.

You can get to the *Handbook* either from the *Main Menu* or during the story after Dr. Potts hands it to you. To get to this tool from the *Main Menu,* use the arrow keys or a mouse, or press a number to move the cursor to *Bear Country Handbook.* Press RETURN, or use the mouse button. The *Bear Country Handbook* menu will appear:

THE BEAR COUNTRY HANDBOOK
by Dr. Martha Potts

1. What a Grizzly Looks Like
2. Grizzly Bear Habits
3. Studying Grizzlies
4. Grizzlies and Garbage
5. Grizzly Bear History
6. Grizzlies Today
7. Visiting Grizzly Country
8. Return to the Main Menu

To make a choice from this menu, highlight the chapter you want to read. Press RETURN, or use the mouse button, and the first screen of that chapter will appear. If you want to get back to the menu before you are finished with the chapter, press ESC. To return to the story you were reading, choose the last option from the menu, *Return to the Main Menu.*

Here is what you will find in the seven chapters of the *Handbook:*

- A description of grizzlies, including details about weight, size and color.

- Information about where grizzlies migrate at each time of the year and details about bear behavior.

- A discussion of how scientists study grizzlies, and a description of two of the tools that they use.

- An explanation of the problems created by the garbage that tourists leave behind in parks.

- A description of the history of grizzlies in the U.S., where bears lived in the past and where they can be found today.

- A description of what conservation groups are doing to help save the grizzly from extinction.

- Instructions telling how to be safety-conscious when traveling or camping in bear country and what to do when you meet or see a bear.

Grizzly Food Data Cards

Dr. Potts has put together a data base on her portable computer. It contains all kinds of information on the foods that grizzlies eat — ranging from animals, such as ants and elk, to plants, like whitebark pine. You will learn where these foods can be found, what they look like and at which time of year they are most likely to be eaten.

During your third mission, Dr. Potts will introduce you to the data base. If you want, she will teach you how to use it. In some of the stories, Dr. Potts will send you to the cards to find information. But once you know how to use the data base, you can also get to it directly from the *Main Menu.*

To get to the *Grizzly Food Data Cards* from the menu, use the arrows or the mouse, or press a number to move the cursor to *Grizzly Food Data Cards.* Then press RETURN, or use the mouse button. The *Data Cards* menu will appear:

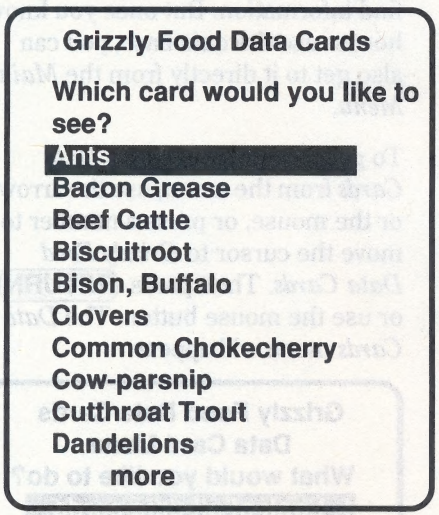
Grizzly Food Data Cards
Data Card Menu
What would you like to do?
1. Look at all data cards
2. Search for words
3. Learn to use the cards
4. Quit

You can browse through the entire list of foods in the data base and choose the name you want, or you can search for cards that contain

particular words.You can also learn to use the data base or leave the data base.

Browsing

To browse through some or all of the data cards, select **1** and press RETURN, or use the mouse button. You will see a list of some grizzly bear food:



Move the highlight / cursor down the list of foods. When you get to "Dandelions," the list will move up, showing more foods. You can keep moving the cursor down to reveal all of them. When you reach the end of the list, the word "**more**" will disappear.

To look at a data card, move the cursor to highlight the food you want, then press RETURN, or use the mouse button. The *Grizzly Foods Data Card* for that plant or animal will appear on the screen.

There is all you need to know about where the plant or animal can be found, what it looks like and when it is most likely to be a food source for grizzlies.

Searching

To search for particular data cards, select **2** on the *Data Card Menu* and press RETURN, or use the mouse button.

To do a search, first define the category of foods that you want to search for. Suppose you want to find all of the foods that the grizzly eats in the summer. You will see the following question:

What word do you want to search for?

_____

Type the word that characterizes the food you want to find. Then press RETURN, or use the mouse button. (In this case, you want to find summer foods, so you would type the word '**summer**.')

Next you will see a new screen:

These are the seven headings on each *Grizzly Food Data Card.* You can choose to search for your word in one of these categories, or you can search in **All categories** — the eighth item.

To do a search in one category, highlight the category in which your search word might be found. Then press RETURN, or use the mouse button. (In the example, summer would be found in the category '**SEASON**,' so you might highlight '**SEASON**' and press RETURN, or use the mouse button.) Then you would see a new menu:

Grizzly Food Data Cards
Find every card where 'summer' is in SEASON
1. Do this search
2. Change this search
3. Search for 'summer' AND
4. Search for 'summer' OR

To do this search, select **1** and press RETURN, or use the mouse button. You will see a list of all plants and animals that belong to the category you have defined. (In this case, you would see a list of all foods eaten by the grizzly in the summer.)

Highlight the name of the food you want, then press RETURN or use the mouse button to see the *Grizzly Food Data Card* for that food.

To **Change** the search, press **2** and then RETURN, or use the mouse button.

You will go back to the word choice screen, and you may type in a new word and highlight a new category in which to search.

If you want to expand your search, you may choose two characteristics to define the category for your search. In an **AND** search, you

you did in the **AND** search — first the first word and category ('summer,' **SEASON**) and then the second word and category ('spring,' **SEASON**).

The difference is that now you are asking the computer to search for foods that fall into either one of these two groups — summer food or spring food. This list will be longer than in the **AND** search list, because a food only has to fall into one of the categories to be included here.

The rule is: In an **OR** search, each food on the search list needs to meet only **one** of the qualifications you have set.

Story 2: Bear Encounters

You have just been assigned the job of field investigator in a large national park. What is your role? — to investigate incidents where grizzlies and people come in contact. You will be called upon to investigate grizzlies disrupting campgrounds, housing developments, garbage dumps and cattle ranches. You will have to determine how serious the incident was, which bear was involved and what to do about it.

Driving Around the Area
In this story, you will have to drive your pickup truck, as represented on a map. Here are some hints to help you travel around:

Use the arrow keys or a mouse to move the truck graphic around the map. If you are having trouble moving right or left, especially if you are trying to negotiate a bend in the road, move up or down a little, and then try to move right or left again. If you are having trouble moving up or down, move right or left a little and try again. When you get to your destination (make certain that you have driven to the end of the driveway, if there is one), press

(RETURN), or use the mouse button.

You will need to use a similar technique to drive in *Story 3: Grizzly Bear Mystery.*

Incident Notes
In your investigation during Story 2: Bear Encounters, *you will need to keep track of a lot of information. Use the following checklist for help:*

Investigation Information
- What type of incident was it?
- Did the bear injure anyone or act aggressively toward people?
- Was all food properly stored?
- Was the bear fed by people or otherwise provoked in any way?

Identifying the bear:
- Sex
- Size
- Ear Tag
- Radio Collar

Conclusions
- Which bear was involved?
- What type of bear was it?
- How old was the bear?
- How many times had the bear been relocated?
- Which problem type best describes the incident?
- What should be done with the bear?

Story 3: Grizzly Bear Mystery

It is no fun finding a dead grizzly, but that is just the discovery that has been made. As a wildlife student, you are called to the scene. It is your job to figure out what caused the bear's death. Did it die of natural causes, or was it killed by humans? Was it poisoned, or was it shot? And if someone killed it, who did it?

Exploring the Meadow For Clues
To help solve the mystery of the grizzly's death, one thing you should do is search the meadow at Elmo Creek for any clues. Use the *Detective's Notes* on the next page as a checklist for clues that you find.

To search for clues in the meadow, use the arrow keys or a mouse to move the + around the meadow. When the + is at a spot where you want to search, press (RETURN) or the mouse button. When you are done exploring the meadow for clues, move the + to your pickup truck, and press (RETURN) or the mouse button.

Preforming the Necropsy
You should also perform a necropsy — an examination of the bear's body

— for clues. To do this move the truck to your lab. To examine the outside of the body, use the arrow keys or a mouse to move the ⌖ to the part of the bear that you want to examine, and then press RETURN or the mouse button. To examine the bear internally, move the ⌖ to a scalpel, and then press RETURN or the mouse button. When you are done performing the necropsy, move the ⌖ to the door of your lab, and press RETURN or the mouse button.

Need Some Help?
If you are having trouble solving the mystery, you can always drive to headquarters (HQ in the lower left corner of the map) and ask Officer Jenkins for help.

Detective's Notes
You need to keep track of the clues you find during Story 3: Grizzly Bear Mystery. *Use the following checklist for help:*

- How would you describe the bear when you first saw it?
- About what time did the bear probably die?
- What clues did you find in the meadow?
- What clues did you find on the body of the bear?
- What clues did you find when examining the bear internally?
- How did the bear die?
- What evidence do you have to support that theory?
- Was a weapon involved, and if so, what kind of weapon?

Interviews: (suspects, notes, alibis)
Joseph Bighorn, rancher
Fred Moon, resort owner
Sylvia Nimrod, hunter
Len Smith, photographer
Malcolm Widener, resort guest

Solution
What is your solution to the mysterious death of the grizzly bear:?

Story 4: Oil Explorer

How will you develop a small work site in a wildlife management area without endangering the balance of the grizzlies' habitat? In this story, you work for an oil company, helping to plan a new oil drilling site in grizzly habitat. To succeed at your job, you must find compromise solutions to a number of problems while taking into account environmentalists' concerns, the needs of your company and government regulations. In each mission, you will be given more responsibilities as you are introduced to different features of the *Grizzly Habitat Model.*

Grizzly Habitat Model

Most of your work for the oil company will be using the *Grizzly Habitat Model* to plan for activities such as drilling test sites and building roads. Here are a few hints to help you use the model successfully:

- When planning a new road or a helicopter flight path, the road or path must start at the existing road and end near the drilling site.
- Make the road or flight path as short as possible; always head toward the side of the site that is closest to the existing road.
- To minimize the destruction of grizzly habitat units, avoid the current season's food supplies.
- If you are having trouble choosing a site for any activity, experiment with being just at the edge of the site, rather than actually within it.
- When you are choosing sites for more than one activity (such as drilling a well and setting up a campground), try placing them close together. That way, some of the damage done to the environment will overlap from the two activities, and the total habitat units lost will be reduced.
- If you are having trouble, ask for help from Jim Kemp, Dana Dinmont or Bitsy Baylor. If you ask for help when you are choosing a site for an activity (when the map is on the screen), you will get advice on that specific activity. If you ask for help when the *Activity Summary* is on the screen, you will get more general advice.

Additional Use of the Model

After you learn to use the *Grizzly Habitat Model* in the *Oil Explorer* story, try using the model from the *Main Menu*. The model will allow you to explore and discover the effects of timber harvesting, and developed campgrounds and resorts on grizzly habitat.

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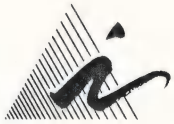

Addendum for the Apple IIGS version of

Audubon Wildlife Adventures: Grizzly Bears

To start **Grizzly Bears** on your IIGS, place *Disk 1* in the 3 1/2-inch Drive 1 of your system. (Place the disk stamped *Disk 2* in Drive 1 when prompted by the program.)

Turn on your monitor, then turn on your computer. You will see a box which says, "Welcome to the IIGS," and a bar which will fill with red as the System and Finder load. A disk icon will appear in the upper right corner of the screen, and a window will open and emerge to the left of the screen.

Launch **Grizzly Bears** by moving the mouse pointer to the icon called GRIZZLYBEARS, and double-click the mouse button.

Note: This version of the program uses a custom System, and it may not launch from the System that came with your computer. Also, it will not run from a hard drive, and it does not support a second disk drive. A free exchange for a hard disk version will be available from Advanced Ideas after March 1, 1989.

AUDUBON

Wildlife Adventures

GRIZZLY GUIDEBOOK

Learn more about the grizzly with these fun and challenging activities.

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GRIZZLY GUIDEBOOK

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by Christopher N. Palmer
Vice President
National Audubon Society

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Material in "Ant Antics" and "Endangered!" was adapted from the Schlitz Audubon Center's *Living Lightly* curriculum series.

Preface

by Peter A.A. Berle
President
National Audubon Society

Welcome to *Audubon Wildlife Adventures*! You are about to enter the exciting world of wildlife conservation. This package provides a fun way to work with important conservation issues while learning about one of the most magnificent animals in the world.

Audubon created this software because we are in the business of finding innovative ways to tell people about the threats facing our environment and its wildlife. Habitat destruction, pollution, illegal hunting and thoughtless exploitation are common throughout the world. The quality of our lives depends upon how we treat our environment. We also have a moral responsibility to be good stewards of our planet, since this is what we leave to our children.

Computers provide an intimate one-on-one learning experience that is not always possible in today's overcrowded classrooms and busy households. The instant feedback a computer provides helps increase both learning and pleasure. You will discover that this software and its comprehensive manual give you a great way to share time, knowledge and fun with your family.

The *Audubon Wildlife Adventures* software series' topics include grizzly bears, whales, sharks and illegal trafficking in wildlife. The software is part of a larger multimedia effort in which Audubon television programs, companion books and teacher guides reinforce one another. If you want to learn even more about grizzly bears, three excellent resources in addition to this software are the *Audubon Television Special* on grizzly bears (narrated by Robert Redford), *Life in the Balance* (the companion book to the television series) and the companion teacher's guide.

Audubon and Advanced Ideas are committed to expanding the frontiers of entertainment and learning. We offer this software with the conviction that it says something important about the world's future.

Letter From the Publisher

by Gary H. Schwartz
President
Advanced Ideas

Welcome to the exciting world of *Grizzly Bears.*

Advanced Ideas is proud to present this outstanding program, the first in the *Audubon Wildlife Adventures* software series.

The teaming of National Audubon Society with Advanced Ideas adds Audubon's knowledge of science, wildlife and environmental education to our technological and educational expertise. The result is a unique opportunity for you to experience, understand and ultimately make informed decisions about the world of the grizzly bear and its special relationship with the human environment.

As you read through this book and perform the activities described within, and as you play out the adventures in the companion software, you will gain a real understanding of these magnificent creatures, and you will learn how we may determine their very survival.

We have provided you with the most up-to-date scientific information possible, combined with state-of-the-art graphics, computerized data bases and on-line guide books. Taken directly from many field researchers, this sophisticated, educationally-accurate and yet interesting and entertaining software takes you into the world of the grizzly.

The experiences and concepts presented within these simulations relate to real-life situations. You will be experiencing examples of dilemmas that require you to make choices and to take a stand. We have provided the tools and have suggested strategies to help make those choices. You must weigh the consequences and make the decisions.

We know that you will enjoy exploring the world of the magnificent grizzly bear.

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Photos by Franz J. Camenzind, Ph.D., Jackson, Wyoming

Grizzly feeding on salmon at McNeil River, Alaska

A Note to Parents

Advanced Ideas products are always an extraordinary value; *Audubon Wildlife Adventures: Grizzly Bears* is no exception. Part of that value is this booklet, the *Grizzly Guidebook.* It contains information and activities that will help you extend the learning and the fun that started when you first began using the software.

The eighteen activities contained in this booklet help you to reinforce the concepts, vocabulary and techniques introduced by the software. And it suggests ways for these ideas to be used in your home and community.

In order for supplemental activities to be helpful, Advanced Ideas and Audubon feel that they must be fun for you and your children to use. We also believe they should promote family involvement. As such, the activities were chosen to be attractive to people of all ages and to address a wide range of interests. You may find that some of the activities are too easy and that others are too hard for your children. Most of them can be adapted to work with any age group. They may even give you ideas for other family activities and projects.

Most important, this booklet was designed to make learning more fun. We hope you agree that it enhances the software and helps make this product a valuable addition to your software library.

If you would like to receive additional information on grizzlies, write to Advanced Ideas for a free 16-page booklet prepared by grizzly experts, *The Bear Facts.*

Ant Antics

Think About This: What skills and processes are important to wildlife biologists in the field?

The software gives you a chance to explore the life of a wildlife biologist. You simulate wildlife studies using research methods and techniques similar to those used by experts. You use a data base when you search through the *Grizzly Food Data Cards,* just as a scientist in the field might refer to information on a portable computer. You see how radio collars are used to track grizzlies, and you even observe grizzlies and learn safe behavior in grizzly country.

What's Happening?
Wildlife biologists use many methods to study animals. The simplest method is called direct observation. That simply means watching animals in their natural environment. John and Frank Craighead are two wildlife biologists who have been observing grizzlies since 1959. They have learned how far bears travel, what they eat at different times of the year, where they den, how they raise their young and how they die.

There are some obvious difficulties to observing grizzlies. They can be hard to find, and each scientist can only study a few at a time. Since we are not easily able to observe grizzlies in the wild, this activity gives you a chance to become a "wildlife" biologist in the field and become an expert on a local wild creature — the ant.

Ant Antics takes you outside into the wilds of your neighborhood to observe ants. Ants can't wear radio collars, and you probably won't have a portable computer with *Ant Data Cards.* But you will still have to use scientific methods in this activity while you collect important information on ants.

Ants are fascinating creatures. They are social insects living cooperatively in colonies. Ant colonies can be located in almost any neighborhood, and they are easy to observe without disturbing their normal activities.

Activity
1) Go on an ant hill search in your neighborhood. Place a small dish of sugar water near the ant hill.
2) Go back to the ant hill the next day, and continue through the following steps. Record your

observations and/or draw pictures.
3) Observe the ants' trails to the food. Are the ants carrying food? How much food can an ant carry relative to its body size?
4) What do you think ants like to eat? Place different kinds of food (cheese, bread, small amounts of sugar) near their trails, and see what they do. Use a stopwatch to see how long it takes an ant to go for the food.
5) Watch the way the ants move along "trails." Do they pay attention to one another? Place an obstacle in the path of an ant, and observe its movement around the object.
6) To find out how fast ants travel, measure off one foot of space along the ground or sidewalk. Use the stopwatch to see how many seconds it takes the ant to travel one foot. Time three runs and find the average speed the ant travels. How far could an ant travel in one hour?
7) Discuss what you discovered by observing the ants, and answer the question, "How are social insects and human communities alike?"

Discovery Time
1) Build an ant farm at home. After it is well established, introduce ants from another colony and observe.
2) Write a story about ants.

Home Critters

Think About This: How would a make-believe "critter" look if it had to survive in your home?

On the Spot With Dr. Potts gives many examples of grizzly adaptations. They can weigh as much as 1,600 pounds, and they are covered with a thick coat of brownish fur to keep them warm in winter months. Grizzlies also have long, sharp claws and teeth for protection and for eating. Refer to the color plates in the *Guidebook* and to the *Bear Country Handbook* on the diskette for detailed bear images and for more information on how the grizzly is adapted to survive in the wild. It may give you some ideas for creating a super "critter" capable of surviving the wilds of your home.

What's Happening?
It is fascinating to study an animal well-adapted to its surroundings. For example, we must strain to see a caterpillar resting on a leaf of the same color, or to notice a praying mantis with a shape that resembles the twigs among which it lives. These are examples of nature as the perfect inventor, giving otherwise

helpless animals protection from being discovered by predators.

Camouflage is one aspect of an animal's adaptation to its surroundings. Lengthened appendages, keen senses, speed, markings, colorations, shapes and special forms are other examples of adaptations that give an animal a better chance of finding food without being eaten in the process.

In this activity, you will have fun creating your own "critters," designed to survive in one part of your home.

Activity

1) You are to design a "critter" that is well-adapted to survive in one part of your house or yard. You first have to select the location you want your "critter" to live in. Possibilities include:

- a critter that lives in the refrigerator
- a critter that lives in a closet
- a critter that lives in the bathtub
- a critter that lives on the lawn

2) Think about how the "critter" will eat, move and protect itself in the location that you have selected. How will these three things influence its body shape, size, color, amount of hair or protective covering, and number and type of sensory organs, legs and arms?

3) Build your "critter" using natural objects, vegetables, spaghetti, fabric, cotton balls, toothpicks and any other materials on hand. You may also use folded construction paper, colored pencils, crayons and markers to add detail.

4) Place the finished "critters" in their "natural surroundings" (chosen location), and talk about how they fit in. Would your "critter" survive the dangers of the location? What would it eat? Could a predator easily find your "critter?" You can even have a family hunt to see how well the "critters" blend in with their surroundings.

Discovery Time

Study the real "critters" (birds, insects, etc.) living in your neighborhood or town. In what ways are they adapted to survive in their surroundings? Is anything in the area posing a threat to their survival? If you discover a problem that can be changed, start an awareness campaign to educate others about the problem. Write to the necessary officials with suggestions for change.

Home Away From Home

Think About This: What are a grizzly bear's basic needs for survival?

The software shows that a grizzly bear's home and survival needs are quite different from those of familiar animals in your neighborhood. Imagine trying to supply a grizzly in your home town with the food mentioned on the *Grizzly Food Data Cards* on the diskette. Think about how far a grizzly usually roams and what happens when land is taken away from the grizzly habitat. All of this and more must be considered in this activity which asks you to design a model zoo environment for a grizzly.

What's Happening?
Grizzlies once ranged over much of North America, from Alaska to Mexico, and from the Pacific as far east as the Mississippi River. But today they are found mainly in Alaska and in the wilderness areas of western and northern Canada. The grizzlies left in the lower 48 U.S. states are found in the mountains of Montana, Idaho and Washington.

The grizzly's natural home has a variety of foods for it to eat. Biologically speaking, the bear is classified as a carnivore, since it has many characteristics in common with other meat-eating animals. Behaviorally speaking, the grizzly is called an omnivore, since it eats plants and meat, but plants may make up 90 percent of its diet. For a more detailed explanation of this problem, refer to Bear Cafe on page 10. The *Grizzly Food Data Cards* on the diskette list the many different foods that the grizzly eats. You'll find that the huge grizzly even eats ants and other insects.

Grizzlies live at different places throughout the year. Sometimes they prefer meadows, and at other times they like forests or mountains. Each type of area is called a habitat. The grizzly's wild habitat is its home.

A grizzly will have a different habitat if it is placed in a zoo. Zoos let us see wild animals which would otherwise be difficult or dangerous for most people to see, although they have the negative effect of removing bears from their natural environment. Zoos try to mimic the animal's natural habitat, both for the

interest of the public and for the animal's well-being. This activity lets you take on the challenge of designing a model zoo habitat that can meet all of the grizzly's survival needs.

Activity

1) Research a grizzly's survival needs before building your model zoo. Think about how its needs might be met at a zoo in your town. You can use library references or talk to a zoo official to collect information. Here is a list of some things to consider in designing a zoo space:

- plants that can grow in your town
- shelter to protect the bear
- providing food and water
- controlling climate for comfort
- lighting
- grouping of bears (sex, age, etc.)
- cage maintenance

2) After collecting the necessary information, you can begin the actual design of your zoo model. Here are two suggestions:

- Diorama — a scene in a box. Use a cardboard box with one side removed. A flashlight may shine through a hole in a side panel for lighting effects. Use sticks, leaves, pebbles, paint, textured material and construction paper to design the bear's cage environment.

- Drawing — can be creative/free hand or architectural in design. A graphic software program can be useful in this design process.

3) Make sure you also include a model grizzly. You can use clay, cloth or cut-out cardboard. You can grow grass to serve as a food supply and as ground cover for your model bear. Moss and lichens also work well for ground cover. Other objects useful in mimicking a grizzly's habitat include: pipe cleaners, tissue paper, spaghetti noodles, spools to support twigs, and cotton balls (for trees).

4) Display the finished work for all to see and enjoy! Talk about the difficulties of creating this model and the challenge of creating a livable man-made environment for grizzly bears.

Discovery Time

Visit the local zoo and write down ideas for improving the quality of life for one animal there. Send a letter with these suggestions to zoo officials.

Can Find

Think About This: How do scientists help the grizzly?

The software gives you many opportunities to explore the life of a wildlife manager. You are able to track a grizzly using a radio collar, decide what should happen to a grizzly after an incident with people, and use information about the grizzly's habitat to decide where development should take place. This activity tells you more about wildlife management, and it is a fun challenge, too.

What's Happening?
Wildlife management is the application of a field of science that tries to produce and protect animal populations in the wild. It was born in the beginning of the twentieth century, and its original purpose was to protect hunted game animals such as deer, wild turkey, waterfowl and quail. Predators like wolves, mountain lions and grizzlies were killed to protect the game animals.

One man who helped to change our ideas about wildlife management was Aldo Leopold. He sought to protect predators as well as game animals. He understood that predators were part of the natural balance, and if they were wiped out, it would hurt all of the animals in an area. For example, if the wolves in an area were gone, the deer population would increase. Many deer would eventually die, because there would not be enough plants for all of them to eat.

By the time Leopold died in 1947, the aims of wildlife management programs were changing. Today, wildlife management programs are designed to protect a wide range of fish and wildlife species, not just those which are sought by hunters and fishermen. Wildlife managers also teach people, and they regulate the use of wildlife resources.

Activity: Read the paragraphs on the next page. The words typed in **bold** print are hidden in the garbage can on the following page. The bear peeking over the garbage can will find the hidden words. Can you?

(Answers on page 46.)

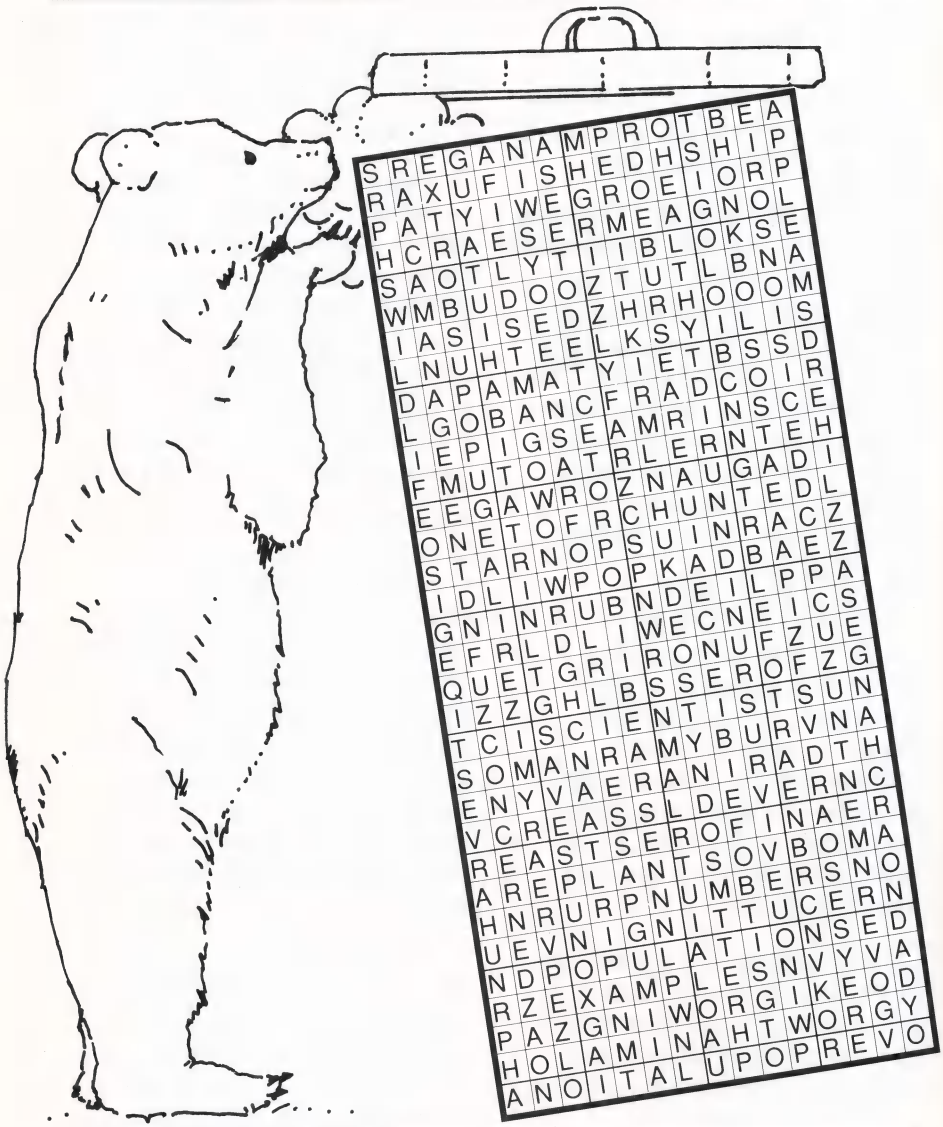
Discovery Time: Read a book by Aldo Leopold. Refer to the bibliography on page 50.

The paragraphs on this page tell a lot about wildlife management. Read how scientists help the grizzly, and then find the bold print words hidden in the garbage can on the next page.

How do **scientists** help the **grizzly**? The **information** that they gather is used to make many **decisions** that will help the grizzlies to **survive**. Their **research** shows how many **bears** there are, how much room they need and whether their **numbers** are **growing** or **shrinking**. Partly based on this information, the **government** will decide how the bears can be best **protected**.

The **field** of **science** that tries to protect and **save** animal **populations** in the **wild** is called wildlife **management**. **Wildlife** management originally dealt with animals that can be **hunted** or **fished**. Today's managers are more **concerned** with the needs of all wildlife. Wildlife management is a type of **applied** science. A **biologist** may study the grizzly just to **learn** more about it. But a scientist who is involved in wildlife management will use that information to make **changes** in the grizzly's **habitat**.

One of the good **examples** of the results of successful wildlife management is the increase in the **deer** populations in many parts of the country. Wildlife managers help increase deer populations by **cutting** or **burning** open areas in **forests** to **permit** the **growth** of the **plants** that deer eat. The **managers** also plan hunting seasons to control the **harvest** of deer, to prevent **overpopulation** and to keep the deer herd **healthy**.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Bear Cafe

Think About This: What creative and tasty dishes would you serve a hungry grizzly at *Bear Cafe?*

Check the *Grizzly Food Data Cards* on the diskette to find out just what a grizzly likes to eat. You'll discover that it eats all kinds of plants and animals, and it will travel to many different habitats to find food. The grizzly's diet changes from season to season, too. Think about all of these things, and choose catchy names for your dishes as you design a menu for the *Bear Cafe.*

What's Happening?
We can get foods that are out of season or from a distant place when we visit a supermarket or go to a restaurant. Our diet no longer depends on our immediate environment, our cultural heritage or the time of year. Under these circumstances, it is easy to lose sight of the strict food web that exists in the wild.

The grizzly's survival depends on finding particular foods in its environment. A large bear's diet consists mainly of plants (up to 90%), some of which are available year-round and others which are specific to seasons. The grizzly also eats meat and insects, which makes it an omnivore.

It is hoped that food will always be available to the grizzly in its natural habitat, but *Bear Cafe* is a make-believe restaurant that serves authentic grizzly grub — just in case. Study the *Grizzly Food Data Cards* carefully to learn just what a grizzly likes to eat, and have fun putting together a healthy menu that could satisfy any hungry bear.

Activity
1) Study the *Grizzly Food Data Cards* on the diskette, and take notes on the foods that the grizzly likes to eat during each season and at different places. If you want to find foods available only in a particular place or during a certain season, use the search option to find those *Cards.* Also, read the "notes" section on each *Card* for additional information about the food.

2) You may want take a look at different menus from real restaurants to get ideas for the layout of your *Bear Cafe* menu. One possibility is to list food by season. How might foods differ from season

to season? Why? What food would be listed for the winter months? Another possible way to organize your menu is to include appetizer, entre and dessert sections. Then name each "dish" (e.g., dandelion pie) so that it fits under one of the headings.

3) When you have decided on a menu format and the foods that you will include, have fun thinking up creative names for your wild food concoctions, such as cow parsnip stew, marinated moose and Auntie Jane's stuffed clover leaves. You can also elaborate on the ingredients in each "dish" with a tasty description.

4) You are now ready to make your menu. Use pencils, pens, construction paper or any other art materials on hand. You can even draw pictures or cut out pictures from magazines (e.g., of pies, stews, etc.) to whet any bear's appetite.

5) Celebrate the opening of the *Bear Cafe* with a family meal serving mock grizzly grub.

Discovery Time
Try to design a menu for your family which includes only food in season and only grown in the immediate area. Is it possible?

Save a Species Campaign

Think About This: Why should we save endangered species?

As we learn more about the threats to certain species and the value they hold in our lives, we can better appreciate the reasons for saving them from extinction. The software gives a valuable look into the life of one endangered species, the grizzly bear. It shows the problem of habitat destruction and competition for space between humans and wildlife. These problems for the grizzly are the same problems facing endangered species worldwide.

This activity gives you a chance to look at the threats facing one endangered species and to find out how that species is important to people. Then, you can take what you have learned and make a creative project with a message for the public.

What's Happening?
Endangered is a name given to a species in immediate danger of becoming extinct. Although extinction has been part of the natural evolutionary process for hundreds of millions of years, the current rate of extinction far exceeds any since the mass extinction of the dinosaurs.

This rise in the number of endangered and extinct species can be linked directly to the increase in the human population. We compete with other living things for limited space, and we use valuable habitats to gain resources. Pollution and other problems threatening our own health also threaten wildlife.

The diversity of life on earth provides us with valuable medicines, fibers, paper, plastics and other products for our use. Plants and animals give us an environment capable of supporting life — complete with oxygen, clean water and usable soil. Endangered species have also been an inspiration to artists, musicians, writers and daydreamers. When people recognize these important roles, it is hoped that solutions aimed at protecting wild environments will be sought out.

Activity
1) Choose one endangered species to research. For information on endangered species, check with

your local library, write to your State Department of Fish and Game, or write:

U.S. Fish and Wildlife Service
18th and C Streets NW
Washington, DC 20240, or

National Audubon Society
950 Third Avenue
New York, NY 10022

2) Find out why the plant or animal is threatened with extinction. Important causes of extinction include: shrinking habitat from development and/or destruction, hunting, poaching, poisons, pesticides and/or introducing non-native animals into the endangered plant or animal's environment.

3) Think about the following two points as you research:

- How has the endangered plant or animal been important to people in the past? For example, has it been used as a food source, for clothing, transportation, pets or as a sign of beauty?
- How has the endangered plant or animal influenced or inspired people in the past? For example, how has it been portrayed in works of art, in music and in literature?

4) Select one or two important things that you found out about your species that you think the public should know about. Choose one of the following options (or any other) to share your information:

- Greeting card — you can put a picture on front and a message inside
- Poster — this can be a picture with a catchy line
- Bumper sticker — this may be a statistic followed by a question

5) Use art materials on hand to make your card, poster or whatever project you chose. Include pictures and special facts about the species. You can use clear contact paper to finish off your project.

6) Send your card, or display your work of art. You can feel good knowing that you may help save a species by sharing your knowledge with someone.

Discovery time

Contact a local organization working to save an endangered species. Find out what they are doing to help save the species, or ask how you can get involved.

Preserving Wildflowers

Think about this: Why do scientists give plants and animals special names?

The *Grizzly Food Data Cards* on the diskette introduce you to the scientific system for classifying plants and animals. You learn the scientific names of foods that the grizzly eats, plus their common names and other information about the grizzly's habitat and appearance. In this activity, you will collect and preserve wildflowers and give them unique "scientific" names inspired by their appearance.

What's Happening?
In the eighteenth century, a Swedish scientist named Carl von Linne developed a scientific system for naming plants and animals. Since Linne used Latin and Greek names, scientists around the world could then be sure that they were talking about the same plant or animal.

The grizzly's scientific name is *Ursus arctos horribilis.* The first word, *Ursus,* is Latin for bear. All North American bears have *Ursus* as a first name. This is a genus name. A genus is a group of animals that are closely related (e.g., wolf, coyote, dog). The next name, *arctos,* is the grizzly's species name. Animals in the same species are very similar (e.g., grizzly and European brown bear). The last name, *horribilis,* is a subspecies name, which is the same thing as a race or a breed.

There are some plants and animals that have not yet been given scientific names. This activity lets you pretend to "discover" an unknown wildflower, preserve it, and give it a "scientific" name of your choice.

Activity
1) Look at the *Grizzly Food Data Cards* on the diskette, and make note of any scientific names. Do any of the plants or animals have a common genus or species name?

2) Go on a nature walk, and collect a few wildflowers that catch your eye. Pretend that you are the first person to lay eyes on these flowers. If there are no wildflowers, look for interesting leaves or ferns.

3) Give each wildflower a made-up "scientific" name that best

describes it. For example, if you have a flower with lots of petals that are yellow, you could call it "multipetalus sunlikus." If another flower has lots of white petals, call it "multipetalus snowlikus."

4) Preserve each wildflower between layers of absorbent paper under a weight. Newspapers, old telephone directories and paper towels work well. Use multiple layers above and below the flower. The paper should be changed a few times the first day and then left undisturbed for three weeks.

5) Cut a piece of heavy paper of a size that will include your pressed flower, its name and enough space for framing. Decide where you want to place the flower, and write in its made-up "scientific" name with neat lettering.

6) When the flower is dried, use the following technique to transfer it to the heavy paper, leaving its name in full view:

Cut waxed paper to twice the size of the heavy paper. Fold it in half, then open it and place the pressed specimen on one half. Fold the waxed paper over the specimen, cover it with one layer of newspaper, and press it with a warm iron (don't over-iron). The waxed paper should seal. Touch up any holes with shaved paraffin (candle wax).

7) Frame your prized specimen for all to see!

Discovery Time

Try discussing your specimen using your made-up name. More than likely, you will be the only one that understands which wildflower you are talking about. You might better understand the importance scientists attach to having only one name for each species.

Ursa Major and Ursa Minor are names given to two clusters of stars, or constellations. They outline a particular shape, one larger than the other. What do you think the shapes are? Look in a library or a bookstore for a chart of the night sky. Then on a clear night, look for the big and little bears in the sky.

Animal Guess?

Think About This: What animals share habitat with the grizzly?

The software gives examples of animals in the grizzly's habitat that serve as sources of food for the bear. But meat is only a small part of the grizzly's diet. Get acquainted with other animals living near the grizzly by playing the game, *Animal Guess?*

What's Happening?
Grizzlies share their habitat with many wild animals. They compete with other animals for plants and for other animals to eat. The meat that bears typically eat is carrion — carcasses left behind from another predator's kill or an animal that died of disease or of old age. The caribou, moose and sheep are important sources of carrion for the grizzly. But the grizzly must compete with the golden eagle, magpie, wolf, fox, lynx and wolverine for unclaimed carcasses.

There are many squirrels in grizzly country, too. They are one source of meat that the bear kills itself. A grizzly will even dig deep into a squirrel's hole to catch it. (Grizzlies also kill and eat salmon and other fish.) A marmot is another rodent in grizzly country, but it is not a source of food for the bear, since it lives well-protected among rocks. The beaver and the porcupine are two other animals in the grizzly's habitat that are not killed by the bear.

Activity
1) Look through the *Grizzly Food Data Cards* on the diskette in order to become familiar with some of the animals that the grizzly eats. Also, read the NOTES section on each animal card. You will find that the grizzly usually eats calves, weakened adults or carrion.

2) Get a group of people together to play *Animal Guess?* One person will try to guess a specific animal in the grizzly's wild habitat.

3) Choose one person to guess a mystery animal first. Have someone else write the name of an animal from the grizzly's habitat on masking tape or paper. Then stick it on the front of a hat or scarf, making sure that the person guessing does not see the animal's name. The person guessing should then put the hat on and face the group so everyone else can see the animal's name.

To play the game, you can select names from the following list of animals in the grizzly's habitat, or you can use the names of other animals. The names with an asterisk (*) can be found on the *Grizzly Food Data Cards* on the diskette.

beaver	bighorn sheep
black bear	buffalo *
caribou	coyote
elk *	fox
man	moose *
mountain goat *	mouse
mule deer *	porcupine
red squirrel *	vole *
wolf	

4) The questions asked about the mystery animal must be able to be answered with either a "yes" or a "no," and each must begin with "Am I ... ?" Decide beforehand how many total questions can be asked by each person who is guessing (e.g., only 5 questions). This will force them to think out their questions carefully and to work from generalizations to specifics. Also, decide if they should ask one person in particular, or if the whole group may answer.

5) Sample questions include: Am I a hoofed mammal? Am I smaller than a one-year-old grizzly cub? Am I a source of food for the grizzly? Am I a rodent?

6) If the person guesses the animal within the number of guesses allowed, they can either guess a new animal or choose someone else to guess the next animal.

7) Continue playing until all people have had a chance to guess.

Discovery Time

Check the bibliography on page 50, or ask a librarian to find a story for you to read that was told by a Native American. Native Americans have learned much from being around wild animals and observing them. Most Native American stories use animals to describe human behavior and characteristics. To some Native Americans, the symbol of the bear represents introspection, or looking inward. This says something about the way in which they viewed this massive animal.

Endangered!

Think About This: Is it important to save endangered species?

The software illustrates a few of the threats to one endangered species, the grizzly. Development projects, hunting and human/bear management programs all contribute to decreases in the grizzly population. Human actions threaten many other species, too. In this activity, you will look at the consequences of the loss of animal populations, and you will talk about the importance of saving endangered species.

What's Happening?

Extinct species are those that are no longer living anywhere on earth. An *endangered* species is one that is in immediate danger of becoming extinct. *Threatened* species are not in immediate danger, but they face problems that may lead them to endangered status. We share the earth with at least ten million species of plants and animals, and current estimates are that as many as two hundred thousand of these species are threatened or endangered.

The charge of the U.S. Endangered Species Act of 1973 is to preserve the plants and animals endangered or threatened with extinction. 756 plants and animals are now listed as threatened or endangered. There are also another 2,995 plants and 221 animals thought to be eligible for threatened or endangered status. The Act has helped to save many species from extinction. As the U.S. Fish and Wildlife Service so hopefully states, "Endangered means there's still time."

This activity gives you a chance to talk about your values on this issue.

Activity

1) The following opinions express varying degrees of commitment to saving endangered species. As a family, read each opinion aloud and talk about the problems or advantages of taking each stand:

A. Programs to save endangered species are not worth the government's expense of time and money, especially since they limit our freedom to use land for other purposes, such as logging, mining or residential development.

B. Programs to save some endangered species should be carried out, but they should have a

low priority in government funding, because we don't need to preserve every species on the planet. Meeting human needs for shelter and food is more important.

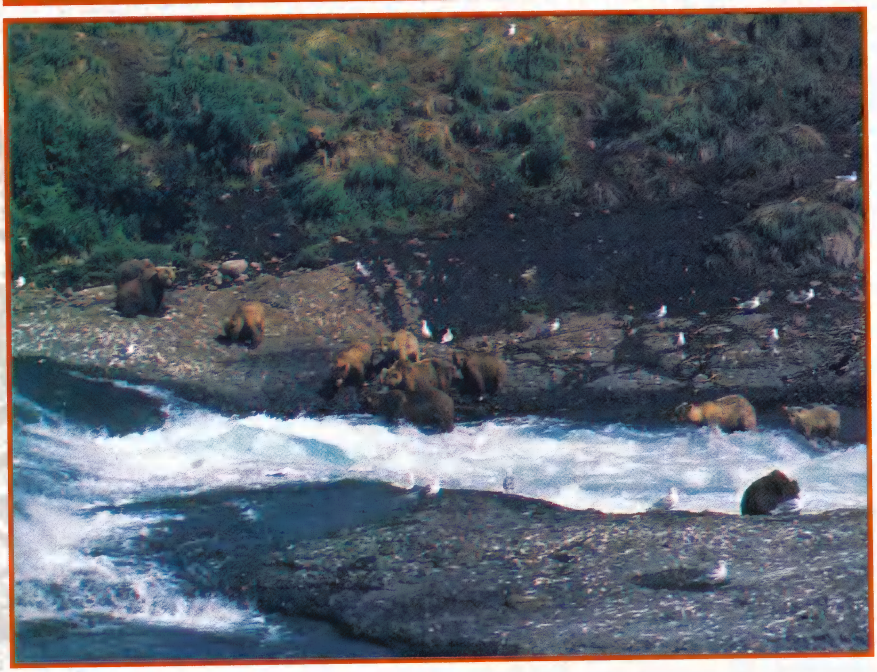
C. Endangered species should be saved because the genetic resources of a particular plant or animal may be beneficial to humanity as a medicine, food or other resource in the future. One-third of our medicines are obtained directly or indirectly from plants.

D. Government programs should make a strong effort to save all endangered species by preserving critical habitat, regardless of the costs or the limits placed on the freedom to use the land for other purposes. All species have the right to protection. They have aesthetic value, and each species is part of a functioning ecosystem which may break down if that species becomes extinct.

2) Decide upon one opinion that best expresses your feelings on the importance of saving endangered species. You may choose one of the opinions above, or you may express one of your own. A group understanding may be reached, or you may each have different feelings on this issue.

Discovery Time
Think about the following:

- Why is the grizzly endangered?
- If the grizzly becomes extinct, how would other plants and animals be affected?
- What can be done to help save the grizzly from extinction?



Group of grizzly bears at McNeil River, Alaska

Two grizzlies fighting in the water, McNeil River, Alaska

Beary Cooperative

Think About This: If given clues about what a grizzly ate and how it behaved during a particular season, could you name the season?

The software gives information about the grizzly's diet and about specific patterns of behavior during each season. Use that information and the following clues about the grizzly's diet and habits, and see if you can identify the season that the "Kamper" family visited Yellowstone Park.

What's Happening?
A grizzly's life is very dependent upon seasonal changes. They hibernate in the winter, mate in the spring (May and June) and give birth to their young in January (while hibernating). Grizzlies eat certain foods at each time of the year, and they put on extra weight in summer and fall months in preparation for hibernation. Grizzlies usually live alone, but they will gather together when there is a lot of food in one small area (e.g., at garbage dumps and at streams when fish are moving upstream) and during the mating season.

If someone told you that they ate a brownie, had a baby or took a nap, you could not identify the season. But if you were told they ate colored hard-boiled eggs, watched fireworks or threw snowballs, you probably could tell the season. With your knowledge about the seasonal changes in the life of the grizzly, and by reading the following *Beary Cooperative Cards,* you can work together in this activity to discover the time of year that the "Kampers" visited Yellowstone Park.

Activity
1) Photocopy the *Beary Cooperative Card* page, and cut the cards along the dotted lines. Get a group of about six people, and give each person one or two cards until all cards are handed out.

2) Starting with *Card #1,* take turns reading your clues to the rest of the group. You may not show the cards to one another. Discuss the clues together until you reach a decision.

4) When you think that you have solved the problem, check the answer on page 46.

Discovery Time
Make up your own set of clue cards for another group activity about grizzly bears.

Beary Cooperative Cards

Card #1: *Read these clues to the group but don't show them this card.*

- Our group task is to identify the season the "Kamper" family visited Yellowstone Park. The answer can be found with these group clues.
- A park ranger spotted a mother grizzly with a cub about 7 months old, and he warned the Kampers to keep their distance.

Read these clues to the group but don't show them this card.

- Unsecured garbage recently attracted Bear #73 into a camp site just down the hill from the Kampers!
- Although grizzly bears usually live alone, they gather together to eat when there is a lot of food in one small area.

Read these clues to the group but don't show them this card.

- Grizzlies mate in May and June.
- Through the telephoto lens of his camera, Mr. Kamper saw a large number of grizzly bears gathering at Rush Creek.

Read these clues to the group but don't show them this card.

- Mrs. Kamper saw a grizzly eating grass and sedge in the valley.
- Pine nuts are an important food for grizzly bears in the fall.

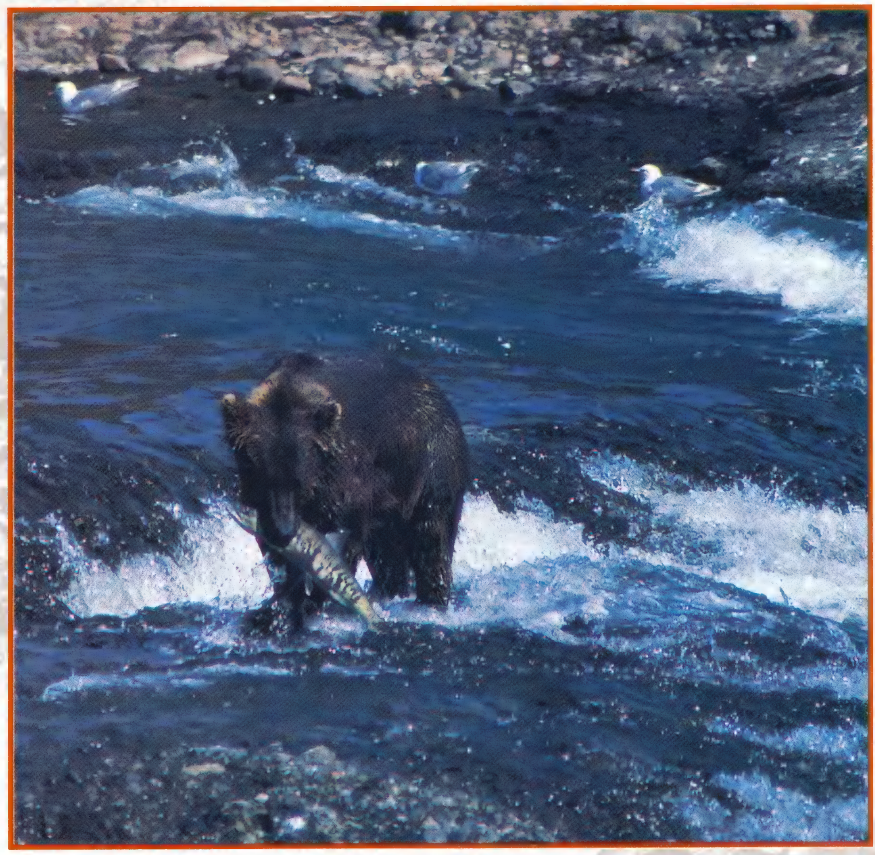
Read these clues to the group but don't show them this card.

- The gestation period for a baby grizzly is about 8 months.
- One wildlife biologist told Joey Kamper that Bear #83 has been noticeably gaining weight.

Read these clues to the group but don't show them this card.

- Mary Kamper, a biology student, identified some bear scat near a berry shrub.
- The grizzly bears in the lower 48 U.S. states usually hibernate from November to April.

Grizzly feeding in fall color, Denali National Park



Grizzly with salmon on falls, McNeil River, Alaska

Bear Squares

Think About This: What does it take to become an assistant to a wildlife biologist who is studying grizzlies? When you first met Dr. Potts while using the software, you were face-to-face with a grizzly. Dr. Potts offered some valuable advice about grizzly behavior that could save your life if you were to meet a grizzly in the wild. In the *Bear Country Handbook* on the diskette, you found information on grizzly appearance, habits and history, and safety in grizzly country. The on-line *Grizzly Food Data Cards* gave you lots of information about a grizzly's diet. You learned what it takes to become Dr. Potts' assistant, but did you learn enough to take on the challenge of *Bear Squares?*

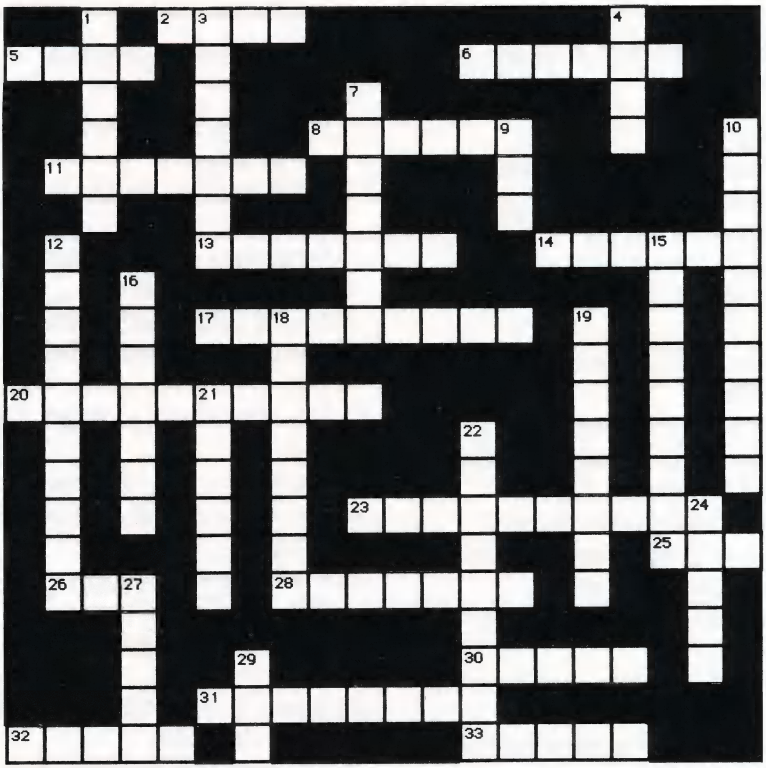
What's Happening?
Scientists who study living things are called biologists. Biologists who specialize in studying animals are called zoologists. A botanist is a biologist who mainly studies plants. Of course, a zoologist who studies grizzlies may also study the plants that the bears eat. To simplify things, the term biologist can be used to refer to all scientists who study grizzlies. When biologists study grizzlies in the wild, they may be called wildlife biologists.

Wildlife biologists who study grizzlies in their natural home know what grizzlies look like, what they eat and how they behave at different times of the year. Wildlife biologists also know how to act around grizzlies, for their own safety. With the knowledge scientists have acquired over years, they are giving us valuable information on how to help this endangered species today.

In this activity, you get to test how much you know about grizzlies as you tackle the *Bear Squares* crossword puzzles.

Activity
1) Review *On the Spot With Dr. Potts* on the diskette.
2) Complete the following *Bear Squares* crossword puzzles, referring to the on-line *Bear Country Handbook* as necessary.
3) Check your answers on the answer key on page 47.

Discovery Time
Go to a local park and talk with a ranger or interpreter. Ask them if they study any wildlife in particular. Also, find out what kind of training they needed to get their job.



Bears Squares: Puzzle 1

Across

2.What biologists collect and study
5.Describes grizzly memory
6.Shape of grizzly shoulder
8.Black bears are __ than grizzlies
11.State grizzlies are found in today
13.Grizzly appearance
14.A bear likely to be aggressive
17.A community of species
20.No grizzlies here since 1922
23.Scientists who study animals
25.Large member of deer family
26.Don't bring to grizzly country
28.Grizzlies may become _____
30.Used for tearing food
31._____ biologists study bears
32.Home for elk in winter
33.Former problem in parks

Bear Squares: Puzzle 1 (cont.)

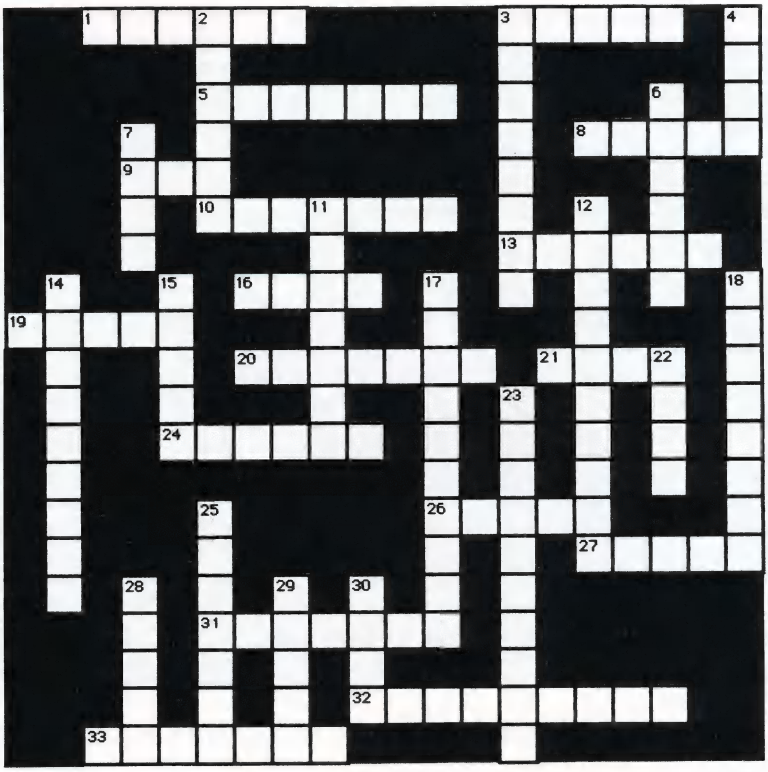
Down

1. Place where grizzlies eat clover
3. Biologists use radio _____ to study grizzlies
4. If you see a grizzly, play _____
7. A radio collar is powered by a _____
9. What NOT to do if you see a grizzly
10. Grizzly species name
12. Species declining in population and in potential danger
15. What bears do in winter
16. The area bears need to live
18. Eats plants and meat
19. Sound a threatened grizzly makes
21. Grizzlies disappeared from this U.S. state in 1931
22. A bear that has been moved to a remote area
24. Hibernation is similar to this
27. Hairs found on grizzly fur
29. Grizzly size

Bear Squares: Puzzle 2

Across

1. Root eaten by Native Americans and grizzlies
3. What ranchers protect from bears
5. Omnivores eat plants and _____
8. Berries are found on a _____
9. Grizzly food found on pine cone
10. The grizzly is an threatened _____
13. U.S. state where most grizzlies live
16. Found on coniferous tree
19. You may surprise a grizzly near rushing _____
20. Black bears are usually _____ than grizzlies
21. Plants make up most of a grizzly's _____
24. Season that grizzlies are found at many elevations
26. U.S. state that grizzlies are found in today
27. Make _____ when hiking in grizzly country
31. A summer food liked by bears and birds
32. A flower that grizzlies and deer eat in summer
33. Grizzlies eat plants, animals and _____



Bear Squares: Puzzle 2

Down

2.Large part of grizzly diet
3.People threaten grizzly _____
4.A lily is a flowering _____
6.Sign of grizzlies in the area
7.Insect that grizzlies eat
11.Shape of grizzly face
12.Few grizzlies found in this state
14.Meat-eater
15.Grizzly genus
17.In summer, grizzlies can find food at many _____
18.Keep your _____ from a grizzly
22.If grizzly charges, climb a _____
23.Close to exticton
25.Never leave this when camping
28.Hoofed mammal — grizzly food
29.Food for bears and eagles
30.Avoid hiking into the _____

Grizzly #103 (with radio collar) in Yellowstone National Park

Grizzly in water along shore, Katmai National Park

Bearfeet

Think About This: What do a grizzly bear's tracks look like?

The *Bear Country Handbook* on the diskette gives some valuable information for safe behavior in grizzly country. One of the things you can do to increase your safety is to watch for signs of grizzlies when hiking. A sure sign of a grizzly is a fresh track, so it's important to know what a grizzly track looks like. This activity teaches you the appearance of a grizzly track, and it lets you practice making bear footprints in your favorite cookie dough, too.

What's Happening?
It is easy to distinguish the grizzly's forefeet from its hind feet. The long claws on the forefeet can measure more than two inches long, and they are only slightly curved. They usually show up in grizzlies' tracks. In contrast, the claws on the hind feet are shorter, and they are curved more sharply.

The grizzly's straight claws on its forefeet work well when digging for ants, squirrels and roots, but they are not well-suited for climbing trees. In contrast, a black bear has short, curved claws on its forefeet, so it is more capable of climbing.

Activity
1) Choose your favorite cookie dough, one that is firm enough to mold or press shapes into. Peanut butter and sugar cookie recipes work well. They also take on the appearance of a paw print on dirt or on snow, respectively.

2) Study the pictures of grizzly footprints below. Notice the difference between the front and back feet. Also, note any similarity between bear tracks and tracks made by *bear-footed* people.

3) Mix the cookie dough. Explore different ways to make grizzly bear feet and bear tracks using the cookie dough. Here is a suggestion:

To make bear footprints, slightly flatten a tablespoon-size ball of dough, making it a bit oblong. Gently push the side of a closed fist into the dough to shape the footprint, leaving extra dough at the top. Then form toe prints by pushing a finger into the dough five times.

4) Bake the dough according to the recipe's instructions. Let the cookies cool before removing them from the cookie sheet.

5) Enjoy these creative *feets.* They can't *bear* to be eaten without milk.

Discovery Time
Have fun making other bear shapes with cookie dough. A grizzly face is fun to mold with its muzzle and ears sticking out. If you share your bear cookies with others, be sure to tell them about the problems this endangered species is facing today and about the ways we can help the grizzly.

Data Search

Think About This: How can you use a computer to find specific facts?

The *Grizzly Food Data Cards* on the diskette are a good example of a computer data base. Data bases store information in an organized fashion so that you can quickly retrieve it. The *Grizzly Food Data Cards* let you find specific information about a grizzly's diet by looking through each card or by searching for specific facts. Trying to complete a similar task with reference books might require you to look through many sources and spend much more time. As you play *Data Search,* you will discover just how you can use a computer data base to find out specific facts quickly and easily.

What's Happening?
Most people have played the *20 Questions* game. You usually start out with general questions and then narrow them down as you learn more of the thing you are asking about. *Data Search* is played in a similar manner, starting with general questions and working down to the specific. But you have the advantage of using the search function in the *Grizzly Food Data Cards* to see which plant or animal fits the clues. In this activity, have fun using the computer as a tool to help you find facts and analyze relationships among plants and animals in the grizzly diet.

Activity
1) This game can be played with two or more people. It begins with one person selecting a plant or animal from the *Grizzly Food Data Cards* for the other person(s) to try to guess. The person selecting should look through the *Data Cards,* choose a plant or animal, and then write down the information from the card in order to answer questions correctly (unless this person is very familiar with the *Data Cards).* Do this without allowing the rest of the players to see the choice.

2) The person(s) guessing should sit at the computer while asking the questions. Have the *Grizzly Food Data Card* menu on the screen. Start with the most general of questions such as, "Is it an animal?" Answers can be only "yes" or "no."

3) If the answer to the above question was "yes," the guesser

should look at an 'animal' *Card* and ask something about the GROUP heading (e.g., "Is it a mammal?")

4) At this point, the guesser may keep looking through the cards randomly, or do a search. For example, if it is known that the animal is a mammal, the guesser should do a search for every *Card* where 'animal' is in KINGDOM *AND* 'mammal' is in GROUP. This should significantly narrow down the original list.

5) The next question could be about the animal's habitat. For example, if it is known that it lives in the woods, the guesser could do another search for every *Card* where 'mammal' is in GROUP *AND* 'woods' is in HABITAT. There is only one, an elk. The next question would be, "Is it an elk?" and a "yes" answer means that the guesser has won!

The guesser should continue until all *Cards* have been searched and only one possible answer appears on the screen, or until the twenty questions have been exhausted. A search may also have to take place in the NOTES heading to narrow answers down.

6) Now it's the guesser's turn to give the clues and to have someone else guess. If limiting the questions to twenty seems either too easy or too hard, adjust the number of questions allowed. Play until everyone has had a chance to both guess and give clues at least once.

Discovery Time

Look into other computer data bases that are available for your use. In California, for example, the Technology in the Curriculum (TIC) materials can be found at each public school, and they include a data base (The Data Relator). There are many other data base programs available that let you access information already on the diskette and store your own information for future reference.

Scavenger Hunt

Think About This: Can you find things in your neighborhood that have something in common with the grizzly?

In the software, you can learn about the grizzly's size, color, habits and habitat. You can also see the ways in which some people are hurting the grizzly and how others are helping it. Although the bear lives far from most people's homes, you can walk through your own neighborhood and find things that are in some ways like the grizzly.

What's Happening?
A grizzly is a unique and amazing wild animal. An adult grizzly is big enough to surprise anyone in the wild. It can run fast for an animal of its size, too. The huge grizzly can survive mainly on vegetation, even though it roams great distances.

Many facts about the grizzly are hard to visualize from the perspective of an urban environment. It becomes easier in this fun family scavenger hunt as you find things in your own neighborhood that are somehow like the grizzly.

Activity
1) This activity should be done after you are familiar with the software. In particular, be familiar with the information in the on-line *Bear Country Handbook.* Using the *Bear Country Handbook,* fill in the grizzly facts you need to find the items listed on the following page.

2) Photocopy the *Scavenger Hunt List* on the following page.

3) Go on a walk outside, and look for things described on the page. As you find examples of things that fit the descriptions, write them down. You can include more than one thing for each clue, especially if you are working in a group.

4) When you are finished, talk about the things that you looked for. Which ones were easy to find? Which ones were harder? Why?

Discovery Time
Look again at the things you found in your neighborhood that cause harm. Is there anything that you can do to stop them from causing harm?

Scavenger Hunt List

Find Something:

- that is as tall as a grizzly standing on its hind feet
- that weighs as much as an adult male grizzly
- that is the same color as a grizzly
- that moves as fast as a grizzly
- that might be found in grizzly country
- that a grizzly might eat
- that is a carnivore
- that is an omnivore
- that might travel as far as a grizzly travels in one year
- that does at least one thing that a grizzly does
- that may not last 100 years
- that causes harm
- that is beautiful and man-made
- that is beautiful and is in its natural state

Pass the Word

Think About This: What special words do wildlife biologists use to describe grizzlies?

Many new vocabulary words are introduced by the software. Some words, such as *whoofing,* refer to the grizzly in particular. But most words that biologists use describe other animals too, such as *endangered, habitat, species* and *adaptation.* In this activity, you will try to guess certain words in a wildlife biologist's vocabulary from one-word clues you will receive from your teammate.

What's Happening?
Each branch of science has a vocabulary particular to its field of study. Wildlife biology is not an exception. There are special words to describe animal's homes, habits and relationships. As new discoveries are made, new words are formed to describe them. Test your understanding of some wildlife vocabulary words, and have fun playing *Pass the Word.*

Activity
1) Decide how many teams of two people each you will have to play *Pass the Word.* Have someone who is not playing the game make one set of word cards (see following page) for each team. Follow the directions for preparing the cards, and give each team one set of cards, face down. The cards should be stacked in the same order for each team.

2) Decide which person on each team will give the clues first. Also, decide which team will go first.

3) The team members giving the clues first should each draw the first card in their stack. They should all be looking at the same word now. They are to take turns giving one-word clues that will help their partner guess the word. If the word is not guessed with the first clue, the second team has the advantage of having heard the first team's responses plus their own clue (since they are all trying to guess the same word). Continue until the word is guessed. The team that guesses the word correctly scores one point.

4) Switch team members' tasks, and have the people who previously guessed the word draw the next card from the stack and give the clues. Continue as before. The first team to score five points wins.

Pass the Word Cards

To make one set of word cards, photocopy this page, and cut out the word cards along the lines. Paste each word on a 3 X 5 card. Stack the cards face down. Each team needs one set of word cards. Make sure all sets are stacked in the same order, so both teams will draw the same word card at the same time.

grizzly	
scat	
relocated	
omnivore	
carnivore	
adaptation	meadow
endangered	woods
threatened	hibernate
extinct	humped
habitat	guard
species	kilograms
genus	tag
wildlife	collar
whoofing	tattoo
claws	muzzle
paws	den

Bear Facts

Think About This: What do people and grizzlies have in common?

While using the software, it may have occurred to you that grizzlies are somewhat like humans. You probably saw a grizzly standing upright when you first met Dr. Potts. You learned that the grizzly eats meat, nuts, berries and even human food. The bear also has a keen memory. In this activity, you will find out other things about the grizzly as you compare *Bear Facts* with facts about people.

What's Happening?
Anyone who has seen a hind footprint of a grizzly in the wild knows how similar it is to a human footprint. It has five toes and a paw pad that is similar in shape to a human foot. Grizzlies will stand upright, eat food that humans eat and even use their forefeet.

Anthropomorphism is a big word that means assigning human qualities to nonhuman objects or beings. This activity is not about having you anthropomorphise the grizzly bear. It just suggests some fun ways for you to see how facts about people relate to *Bear Facts.* Keep in mind that these are only averages, that there is great diversity among bears, and that bears experience seasonal changes.

Activity
1) Look over the list of *Bear Facts* on the following page. You will notice that the left side of the page is filled with information about the grizzly, and the right side is to be filled in with facts about you and people in general.

2) You will need a tape measure, scales and a watch with a second hand to gather measurements and information. Your baby book or information about you as a baby is also helpful.

3) Fill in the information asked about you and other people.

4) Did any of the *Bear Facts* surprise you?

Discovery Time
Make a graph showing the rate of growth of a grizzly from birth to adulthood, using the data on the next page. Show your growth rate in a different color on the same graph. Compare the two growth rates.

Bear Facts List

An adult male grizzly's average height, standing upright: *7 feet*	Your height:
An adult male grizzly's average weight: *500 pounds*	Your weight:
The average birth weight of a grizzly cub: *8 ounces*	Your birth weight:
The average weight of a one-year-old male grizzly cub: *120 pounds*	Your weight at one year:
The average grizzly weight loss during hibernation: *5 - 40% of weight*	Your weight loss this winter:
The average grizzly weight gain in one year: *amount lost in hibernation*	Your weight gain last year:
The length of time a grizzly cub stays with mother: *2 years*	How many years you will probably remain at home:
The average number of cubs a grizzly has in one litter: *1 - 2*	Average number of babies your mother had at one time:
The number of teeth an adult grizzly has: *42*	Number of teeth you have:
The average length of an adult grizzly's foot: *11 inches*	Length of your foot:
How fast an average adult grizzly can run: *35 miles per hour*	How fast you can run:
An average grizzly's life span: *30 years in a zoo*	Average person's life span:

Tic-Tac-Paw

Think About This: Can you describe a grizzly-related word with a drawing?

The software gives you many new visual images about the grizzly, the people who enter into the bear's life, the bear's wild home and the animals and plants in the bear's habitat. This activity asks you to put some of those images on paper in a game of *Tic-Tac-Paw.*

What's Happening?
Tic-tac-toe is a fun game to play anywhere. This version has a new twist which makes it a bit more challenging. You have to get your teammate to guess a grizzly-related word by drawing pictures describing the word. If you succeed, then you get to place your "X" or "O." As always, three-in-a-row wins!

Activity
1) Photocopy the following *Tic-Tac-Paw* page, and cut out the word cards along the dotted lines.

2) Draw a tic-tac-toe grid on a piece of paper. Make it large enough for a word card to fit inside one of the squares. Place one word card, face down, on each of the 9 squares.

3) Decide which team will have the "X" and which will have the "O."

4) Begin the game with one team choosing a square in which to place a mark. One of the team members must pick up the card that is face down on that square without showing it to the other teammate. That person must try to draw a picture that describes the word on the card, while their teammate guesses. The person drawing may not speak. A limit (e.g., 1 minute) may be placed on drawing.

If the word is guessed within the time limit, then that team gets to draw a mark ("X" or "O") on the chosen square. If not, pass the word to one person on the other team who will then draw in the same manner. If they do not guess the word, the first team draws a new word from the pile of extra cards to try again for that space.

5) After a word is guessed correctly and a mark is placed, the other team has a chance to draw a card on another square. The first team to get three marks in a row wins.

Discovery Time
For continued fun, make your own set of word cards for *Tic-Tac-Paw.*

Tic-Tac-Paw Words

Photocopy this page, and cut out the words along the dotted lines.

habitat	meat
wildlife	stream
claws	grizzly bear
paws	tracks
fur	carnivore
fish	meadow
nuts	woods
ranger	hibernate
hunter	tag
tourist	radio collar
biologist	muzzle
berries	den
grasses	black bear

Pet Study

Think About This: How well is your pet adapted to survive in its home environment?

The software shows that the grizzly has certain physical and behavioral adaptations that help it to survive in its wild environment. The bear is big, strong and able to survive cold winters. The grizzly's long sharp claws on its forefeet enable it to dig ants out of rotted logs and get squirrels out of their holes.

Particular patterns of behavior also help the bear. The mother bear (sow) stays with her young and protects them from the adult male bear who may eat the cubs.

Grizzlies are also able to stand on their hind feet for a better sniff at the wind. These are only a few of the many adaptations that contribute to the bear's survival. In *Pet Study,* you will study the adaptive characteristics of an animal closer to home, a pet dog.

What's Happening?
The pet dog is a domestic animal that usually lives outside of its natural habitat. Its breed may have been wild once, or it may be the result of generations of selective breeding for specific purposes. Whichever the case, it probably lives in a home environment that makes some physical and behavioral traits either undesirable for survival or obsolete. In this activity, you will identify some beneficial and some obsolete adaptive characteristics of a dog living in a domestic setting. All work with the pet will be through observation or gentle touching only.

Activity
1) Choose a pet dog to study, either your own or someone else's. How is this pet physically suited to survive in its home environment? If it has a particular fur type, does it match the climate of your neighborhood and/or household? Look at the following physical traits that may be related to the dog's surroundings and environmental demands:

- body type
- amount of fat
- amount of fur
- pads on feet
- jaw strength
- length of claws

2) Identify any of the above physical traits that might not be beneficial to the dog's well-being.

3) What habits help this pet to survive in its home environment? Does the dog get rewarded if it does anything special? Consider:

- hunting ability
- ability to retrieve
- ability to point
- ability to do tricks
- barking habits
- ability to provide protection for family

4) Now look again at the habits you identified. Are any of them detrimental to the animal's well being?

5) Are there any changes that can be made in your home or with the pet to make its lifestyle more compatible with its physical and behavioral qualities? (e.g., clipping its nails, cutting its hair, giving it more space to roam in, giving it obedience training, etc.)

Discovery Time

Go to the local animal shelter and observe the breeds of dogs. How are physical and behavioral traits helping with their survival in this environment? Are some of these animals more likely than others to find owners? What happens to the dogs that do not find homes?

Answer Key

Can Find Answer:
(from page 9)

S R E G A N A M P R O T B E A
R A X U F I S H E D H S H I P
P A T Y I W E G R O E I O R P
H C R A E S E R M E A G N O L
S A O T L Y T I I B L O K S E
W M B U D O O Z T U T L B N A
I A S I S E D Z H R H O O O M
L N U H T E E L K S Y I L I S
D A P A M A T Y I E T B S S D
L G O B A N C F R A D C O I R
I E P I G S E A M R I N S C E
F M U T O A T R L E R N T E H
E E G A W R O Z N A U G A D I
O N E T O F R C H U N T E D L
S T A R N O P S U I N R A C Z
I D L I W P O P K A D B A E Z
G N I N R U B N O E I L P P A
E F R L D L I W E C N E I C S
Q U E T G R I R O N U F Z U E
I Z Z G H L B S S E R O F Z G
T C I S C I E N T I S T S U N
S O M A N R A M Y B U R V N A
E N Y V A E R A N I R A D T H
V C R E A S S L D E V E R N C
R E A S T S E R O F I N A E R
A R E P L A N T S O V B O M A
H N R U R P N U M B E R S N O
U E V N I G N I T T U C E R N
N D P O P U L A T I O N S E D
R Z E X A M P L E S N V Y V A
P A Z G N I W O R G I K E O D
H O L A M I N A H T W O R G Y
A N O I T A L U P O P R E V O

Beary Cooperative Answer:
(from pages 22 and 23)

The "Kampers" visited Yellowstone Park in the **summer**.

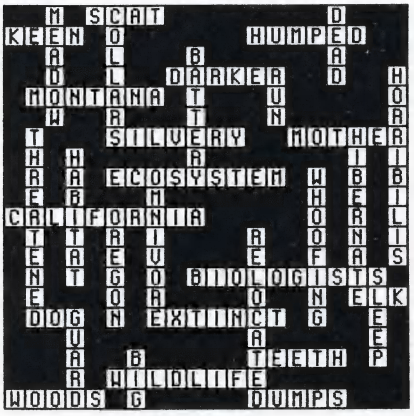
Clues which support the correct answer are the following:

- Grizzly cubs are born in January, and a bear was spotted in the park with a cub about 8 months old (players should be able to identify the birth month from the information given on the gestation period)
- Bears were seen gathering around a stream (bears group during feeding and mating times), and salmon spawn in summer months

Clues which alone do **not** support the correct answer:

- A bear eating from a berry shrub may imply summer **or** fall
- A bear gaining weight may be preparing for hibernation, which could be summer **or** fall
- Bears eat grass year-round
- Bears eat berries in summer **and** fall

Bear Squares Answer: Puzzle 1
(from page 27)



Bear Squares Answer: Puzzle 2
(from page 29)

Across
2 .Scat
5. Keen
6. Humped
8. Darker
11. Montana
13. Silvery
14. Mother
17. Ecosystem
20. California
23. Biologists
25. Elk
26. Dog
28. Extinct
30. Teeth
31. Wildlife
32. Woods
33. Dumps

Down
1. Meadow
3. Collars
4. Dead
7. Battery
9. Run
10. *Horribilis*
12. Threatened
15. Hibernate
16. Habitat
18. Omnivore
19. Whoofing
21. Oregon
22. Relocated
24. Sleep
27. Guard
29. Big

Across
1. Yampah
3. Sheep
5. Animals
8. Shrub
9. Nut
10. Species
13. Alaska
16. Cone
19. Water
20. Smaller
21. Diet
24. Summer
26. Idaho
27. Noise
31. Berries
32. Dandelion
33. Insects

Down
2. Plants
3. Survival
4. Forb
6. Tracks
7. Ants
11. Concave
12. Washington
14. Carnivore
15. *Ursus*
17. Elevations
18. Distance
22. Tree
23. Endangered
25. Garbage
28. Bison
29. Trout
30. Wind

CONSERVATION ORGANIZATIONS AND GOVERNMENT AGENCIES WORKING FOR THE GRIZZLY BEAR

National Audubon Society
950 Third Avenue
New York, NY 10022

Defenders of Wildlife
1244 Nineteenth Street NW
Washington, DC 20036

The Wilderness Society
1400 Eye Street NW, Tenth Floor
Washington, DC 20005

Sierra Club
730 Polk Street
San Francisco, CA 94109

The National Wildlife Federation
1412 Sixteenth Street NW
Washington, DC 20036-2266

U.S. Fish and Wildlife Service
Division of Endangered Species
and Habitat Conservation
Department of the Interior
18th and C Streets NW
Washington, DC 20240

U.S. Forest Service
P.O. Box 2417
Washington, DC 20013

National Park Service
Interior Building
P.O. Box 37127
Washington, DC 20013-7127

Bureau of Land Management
Department of the Interior
18th and C Streets NW
Washington, DC 20240

Senator _____
U.S. Senate
Washington, DC 20510

Representative _____
U.S. House of Representatives
Washington, DC 20515

Montana Department of Fish,
Wildlife, and Parks
1420 East Sixth
Helena, MT 59620

Idaho Fish and Game Department
600 South Walnut/Box 25
Boise, ID 83707

Washington Department of
Wildlife
600 N. Capitol Way
Olympia, WA 98504

Wyoming Game and Fish
Department
Cheyenne, WY 82002

Glossary

adaptation a structural or functional change which makes an organism better suited to its environment

biome a large geographic area with somewhat uniform climatic conditions and characterized by a distinctive type of vegetation (e.g., grassland or desert)

camouflage a protective disguise or behavior that helps to hide by imitating natural surroundings

carrying capacity the number of animals a given area can support, dependent upon conditions within the habitat, such as rainfall

consumer a user of goods or services

diversity variety

ecosystem a community of organisms and their nonliving environment

endangered close to extinction

extinct no longer in existence

habitat the region where a species naturally lives; where food, water, shelter and space needs are met

indicator species a plant or animal whose presence in an area indicates certain environmental conditions

interdependence relationships, based upon need, between life forms in an ecosystem

limiting factors environmental influences in the life history of an animal which directly affect its population growth (e.g., food, water, shelter, space, disease, predation, climatic conditions, pollution, hunting, accidents)

resources a portion of an environment upon which people place or assign value, or see as being available for use

species a group of individuals having certain attributes in common and capable of breeding to produce fertile offspring under natural conditions

threatened declining in number and potentially endangered if current trends continue

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About National Audubon Society

In the late 1800's, forward-thinking people became concerned over the slaughter of plumed birds for the millinery trade. They gathered together in a group to protest, calling themselves the Audubon Society after the famous painter and naturalist John James Audubon.

In 1905, thirty-five state Audubon groups incorporated as the National Association of Audubon Societies for the Protection of Wild Birds and Animals, since shortened to National Audubon Society. Now, with more than half a million members, five hundred ten chapters, fourteen regional and state offices, a thirty million dollar budget and a staff of two hundred fifty, the Audubon Society is a powerful force for scientific research, conservation education and environmental action.

The Society's headquarters are in New York City, and the legislative and television departments work out of offices on Capitol Hill in Washington, DC. Ecology camps, environmental education centers, research stations, and two hundred fifty thousand acres protected in eighty sanctuaries are strategically located around the country.

The Society publishes an award-winning magazine, *Audubon*, an ornithological journal, *American Birds*, a newspaper about environmental issues and grassroots activism, *Audubon Activist*, and a newsletter as part of the youth education program, *Audubon Adventures*.

Audubon Television Specials reach millions of people on prime time televison on SuperStation TBS and public television.

The Society's mission is expressed by the Audubon Cause: to conserve plants and animals and their habitats, to further the wise use of land and water, to promote rational energy strategies, to protect life from pollution and to seek solutions to global environmental problems.

For further information, write or call:

National Audubon Society
950 Third Avenue
New York, NY 10022
(212) 832-3200

Also From National Audubon Society

Audubon Television Specials — This series of award-winning, hour-long television programs about wildlife and the natural world offers viewers a dramatic look at the wonders of nature, including some of the world's rarest creatures. The programs stress the importance of conserving our natural heritage, and they are complemented by the *Audubon Wildlife Adventures* computer software series.

The television series combines the concerns of the American conservation movement with the talents and resources of commercial and public television. It is co-produced by National Audubon Society, Turner Broadcasting System and WETA/TV, the public broadcasting station in Washington, DC. It is supported by a major grant from the Stroh Brewery Company. Each program first airs four times on cable SuperStation TBS and then runs again in the summer on PBS stations nationwide.

Life in the Balance — This is a beautifully-illustrated companion book to the *Audubon Television Specials* and is available in bookstores throughout the country. Environmental writer David Rains Wallace explores the earth's ecosystems from the Galapagos Islands to the polar regions, offers dramatic portraits of wild creatures and discusses the changes civilization brought to the environment. Jacques Cousteau described the book as "a feast for mind and eye." *Life in the Balance* is published by Harcourt Brace Jovanovich.

About Advanced Ideas

Take professional educators with years of experience with children and computers. Add expert programmers with an uncompromising dedication to quality. Include game designers who think learning should be fun. The result is Advanced Ideas, the software developers who bring learning into play.

At Advanced Ideas we believe that sound educational programs don't have to be dull. In fact, we think the best programs use the most current technology available to produce entertaining products that have clear educational value. Used in over 7,000 school districts, our educational software proves that **motivated learning** works best.

Advanced Ideas' learning programs have earned the certification of endorsement from the National Education Association. They have received accolades in reviews from major educational and software magazines and journals. Our products have consistently made the best-seller lists, and they have received *Parents' Choice* Honors and *Family Computing*'s Critics' Choice and Teachers' Choice Awards.

Flexibility is another key element in our educational design. Our products come ready to use with extensive word lists, multiple topics to explore or many levels of play. Optional LearningWare diskettes extend the products into new areas. And our authoring systems make our programs infinitely expandable by letting you create lessons tailored to your child's interests and needs. Without programming, you can quickly and easily create your own quizzes, develop special word games or design your own subject areas.

We also know that the most important thing we produce is a **satisfied customer**. Our customer support lines and service policies are designed to provide you with all of the support you need from a software company: backup diskettes, diskette exchanges and a strong customer service department ready to help.

Advanced Ideas offers exceptional value, fun and support — all key elements in the software of choice.

Also From Advanced Ideas

The Game Show — A popular TV quiz show format with challenging questions that teach information, vocabulary and essential thinking skills in a game of clues and target words. Comes complete with 40 topics in language arts, social studies, science and math for grades 3 - 8. Its authoring system allows you to create lessons for any subject. Ages six to adult.

Tic Tac Show — An animated quiz emcee interacts with one or two players of any age in a game which combines the strategy of tic-tac-toe with an entertaining question-and-answer format. Create your own questions on any topic with the easy-to-use authoring system. Ages four to adult.

Master Match — Test your visual memory and factual knowledge in a game which asks you to find matches in images and words under numbered mystery squares. Use the authoring system to create matches in any topic, using text, graphics and foreign language characters. Ages six to adult.

Wizard of Words — Five different word games appear in a medieval setting of knights, heralds, jugglers, a princess and even a friendly fire-breathing dragon. All use a 38,000-word vocabulary to develop reading, spelling, vocabulary and dictionary skills. This best-seller also allows you to create your own word lists for use in two of its educational games. Ages five to adult.

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Audubon Wildlife Adventures

Look for these new products from Advanced Ideas and the National Audubon Society, available in 1989 and 1990:

Audubon Wildlife Adventures: Whales — Four interactive stories introduce conservation issues. Play a marine biologist or a whale-watch expedition planner to explore, search and create solutions to the conflicts between people and whales. Simulated field work, ecological modeling and an on-line data base help you find balanced solutions. For ages nine to adult.

Audubon Wildlife Adventures: Sharks — A simulation of a scientific investigation introduces players to the shark through four interactive stories. Playing the role of a marine biologist, an abalone fisherman or a sport diver, players investigate habits of the shark and search for creative ways to protect it. Includes a biological model and a database of helpful information. For ages nine to adult.

Audubon Wildlife Adventures: Poacher Patrol — Explore the world of poaching and smuggling that threatens many endangered species. In the role of government undercover agent, a private individual or an informer, learn about the dangerous task of protecting our wildlife. Four interactive stories simulate a scientific and social investigation. For ages nine to adult.

For educational institutions:

Audubon Television Specials on Videocassettes — Originally broadcast on SuperStation TBS and public television, these 60-minute programs are currently available as supplementary material. Special teacher's guides to the videocassettes are also available.

Teacher's editions are available for all **Audubon Wildlife Adventures**. Teacher's editions of the software titles contain a backup diskette(s), complete curriculum guide, an expanded *Guidebook* with answers to most-often asked questions, school activities and a complete library of teaching materials.

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